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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/523,566

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EXAMINER

GOLOBOY, JAMES C

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

12/27/2007

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/523,566

**Applicant(s)**

YAGISHITA, KAZUHIRO

**Examiner**

James Goloboy

**Art Unit**

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. Applicant's arguments filed 9/20/07 are persuasive, and the rejections set forth under 35 USC 102 and 103 in the office action mailed 5/23/07 have been withdrawn. The salicylate detergent of Campbell does not have the same structure as the claimed detergent. The double patenting rejections in the previous office action have been overcome by applicant's terminal disclaimers filed 9/20/07. New grounds of rejection are set forth below.

#### ***Claim Rejections - 35 USC § 103***

2. Claims 1-2, 5-6, 8-9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katafuchi (U.S. Pat. No. 6,159,911).

In column 1 lines 5-8, Katafuchi discloses a diesel engine oil composition, and in column 2 lines 55-58 teaches that an alkaline earth metal salicylate is preferred as the detergent. In column 3 lines 18-27, Katafuchi discloses that the salicylates are derived from alkylsalicylic acids containing either one or two alkyl groups containing 8 to 18 carbon atoms, meeting the limitations of component (A) of claim 1 when the alkylsalicylate is either formula (1) or (2). In column 3 lines 33-37 Katafuchi discloses that the detergent is present in an amount of 5 to 40% by weight, and in column 2 lines 59-61 discloses that the detergent preferably has a TBN of 120-500. The metal concentration will therefore overlap the range recited for component (A) of claim 1.

While Katafuchi does not disclose the positions of the alkyl groups in the alkylsalicylate, substitution at the 3-position or 3- and 5- positions is obvious in light of the limited number of possibilities. Katafuchi further discloses in column 2 lines 46-50 that the base oil can be certain synthetic oils that generally do not contain sulfur.

In column 4 lines 8-15 Katafuchi discloses that further additives, including an antiwear agent, can be added to the composition, and in column 4 lines 35-39 discloses that the antiwear agent can be molybdenum dithiophosphate or dithiocarbamate, meeting the limitations of claim 6. In column 3 lines 44-50, Katafuchi discloses that the total phosphorus content of the engine oil is 100 ppm or less. As the concentration of sulfur in the antiwear additives is approximately twice that of the phosphorus, the concentration of sulfur in the composition will meet the limitations of claim 5.

The use of the diesel engine oil of Katafuchi in a diesel engine meets the limitations of claim 9. Diesel engines are prone to water contamination, and therefore the use of the oil of Katafuchi in diesel engines would also meet the limitations of claims 8 and 11.

The only differences between Katafuchi and claims 1-2, 5-6, and 9 are therefore that the concentration ranges taught by Katafuchi overlap the ranges recited in the claims instead of falling within them. See MPEP 2144.05(I): "In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976);"

3. Claims 9-10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Katafuchi in view of Curtis.

The discussion of Katafuchi in paragraph 2 above is incorporated here by reference. Katafuchi discloses a lubricating composition used in an internal combustion engine meeting the limitations of claim 9 but does not disclose an internal combustion engine using fuel having a sulfur content of 50 ppm or less.

Curtis, in paragraphs 5-9, discloses an engine lubricated with a lubricant comprising a detergent. In paragraph 50 Curtis discloses that the detergent can be a salicylate, such as the salicylate of Katafuchi. In the reference's claim 1 Curtis discloses that the engine can use a low-sulfur diesel fuel, and in paragraph 12 teaches that a low-sulfur diesel contains 15 ppm or less of sulfur, falling within the range recited in claim 10.

It would have been obvious to one of ordinary skill in the art to use the salicylates of Katafuchi in the lubricant for an engine using low-sulfur fuel of Curtis, as Campbell teaches that the salicylates are useful in internal combustion engines and Curtis teaches that they are useful in engines that take low-sulfur fuel.

4. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katafuchi in view of Papay.

The discussion of Katafuchi in paragraph 2 above is incorporated here by reference. Katafuchi discloses a lubricating oil composition meeting the limitations of

claim 1 and containing a phosphorus-containing antiwear agent. Katafuchi does not disclose the specific antiwear agents of claims 2 and 4.

Papay, in columns 43-44, discusses suitable metal-free antiwear agents for a lubricant composition. In column 44 lines 15-22, Papay teaches that trihydrocarbyl phosphite and phosphite esters, including specific esters such as tricresyl phosphate and tributyl phosphite meeting the limitations of claim 2 (structure 2) are suitable agents. As these antiwear agents do not contain sulfur, their use in the composition of Katafuchi meets the limitations of claims 6 and 7.

It would have been obvious to one of ordinary skill in the art to use the phosphite and phosphate antiwear agents of Papay in the composition of Katafuchi, as Papay teaches in column 1 lines 41-54 that the elimination of zinc is environmentally advantageous, and additionally to reduce the sulfur content of the composition.

5. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Katafuchi in view of Tamoto (U.S. Pat. No. 5,458,807).

The discussion of Katafuchi in paragraph 2 above is incorporated here by reference. Katafuchi discloses a composition comprising a salicylate meeting the limitations of claims 1-2, but does not disclose an alkylsalicylate with alkyl groups meeting the limitations of claim 12.

In column 1 lines 9-13, Tamoto discloses an engine oil composition. From column 2 line 66 through column 3 line 17, Tamoto discloses that the composition preferably contains a metal salicylate, which can have 1 to 4 alkyl groups of 1 to 30

carbon atoms each. The metal salicylate of Tamoto therefore encompasses the metal salicylates of claim 12, and the use of the salicylates of Tamoto as the salicylates of Katafuchi meets the limitations of claim 12.

It would have been obvious to one of ordinary skill in the art to use the salicylates of Tamoto as the salicylates of Katafuchi, as Tamoto teaches that they are oil-soluble salicylates, and useful engine oil additives.

6. Claims 1-4, 8-9, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chambard.

In paragraphs 8-11, Chambard discloses a lubricating composition comprising an overbased detergent, which is used for a diesel engine. In paragraphs 36-52 Chambard describes the overbased detergent. In paragraph 52 Chambard discloses that the preferred detergent is calcium salicylate. In paragraph 50 Chambard discloses that the alkyl groups of an alkylsalicylate advantageously contain 5 to 100 carbon atoms, and that when two alkyl groups are present, the average number of carbon atoms in the alkyl groups is at least 9. The alkylsalicylates of Chambard therefore meet the limitations of claims 1-2, and based on this teaching, it would be obvious to one of ordinary skill that when  $R^1$  is a smaller alkyl group (5-9 carbon atoms),  $R^2$  should be a larger alkyl group (10 or more carbon atoms. Similarly, when  $R^1$  is a larger alkyl group,  $R^2$  can be a smaller alkyl group. Therefore, the salicylates of claims 3-4 and 13 are also rendered obvious by Chambard. In paragraph 51, Chambard discloses that the

concentrations of salicylates can be from 0.5 to 30% by weight of the composition, which will lead to a metal concentration overlapping the range recited in claim 1.

The use of the diesel engine oil of Chambard in a diesel engine meets the limitations of claim 9. Diesel engines are prone to water contamination, and therefore the use of the oil of Chambard in diesel engines would also meet the limitations of claims 8 and 11.

### ***Response to Arguments***

7. Applicant's arguments have been considered but are moot in view of the new grounds of rejection.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nakazato (U.S. Pat. No. 6,569,818) provides examples of the metal contents of various detergents.

Polhaar (U.S. Pat. No. 6,162,769) teaches that medium-speed diesel engines are prone to water contamination.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Goloboy whose telephone number is 571-272-2476. The examiner can normally be reached on M-F 9-5:30.




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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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